REMARKS

Applicant responds herein to each of the issues raised in the Office Action. Applicant appreciates the thorough examination of the present application and the indication of allowable subject matter in Claims 9, 21- 22 and 30-31. Applicant submits the present application is in form for allowance for the reasons discussed below.

The Prior Art Rejections:

Claims 1, 3, 5, 8, 11, 14-16, 23-25 and 28-29 stand rejected as anticipated under 35 U.S.C. § 102 in light of United States Patent No. 5,739,730 to Rotzoll ("Rotzoll"). Office Action, p. 2. Claims 1-31 stand rejected as obvious under 35 U.S.C. § 103 in light of United States Patent Application Publication No. 2003/0048145 to Albon *et al.* ("Albon") in view of United States Patent No. 5,648,744 to Prakash *et al.* ("Prakash") and further in view of Rotzoll. Office Action, p. 3. Applicant respectfully submits that the rejections should be withdrawn at least as the Office Action's treatment of varactors as indistinguishable from capacitors is both an overly broad interpretation of the claims and a misapplication of the underlying technology in the context of voltage controlled oscillators as recited in the claims.

In rejecting the claims over Albon, the Office Action states "Albon is silent on the construction of the capacitors." Office Action, p. 4. However, the Office Action asserts "Prakash of record and Rotzoll both disclose that the capacitors that make up a switched capacitor can be composed of varactors." Office Action, p. 4. Similarly, the rejections under Section 102 based on Rotzoll are based on treating a varactor as "a special form of capacitor." Office Action, p. 3. Thus, the present rejections are all based on treating varactors and capacitors as, essentially, indistinguishable as recited in the pending claims.

However, independent Claim 1 recites both "a switched capacitor circuit" and "a switched varactor circuit," where the varactors are responsive to an applied control voltage. Independent Claims 11, 14 and 23 include similar recitations. The present specification further discusses the selection of values for the capacitors/varactors with respect to a **combined** varactor and capacitor structure, which may affect the selection of component values. As described for some embodiments of the present invention, the paired switching of

a capacitor and varactor in the circuit may provide for improved performance in gain control over prior art systems. In other words, it is the changing of **both** a varactor and a capacitor value that may be used to limit gain variation, and no such **combination** of switchable components is disclosed or suggested by any of the cited references in this action or the previous actions in this matter. The Office Action's assertion that the capacitors may be varactors clearly does not result in a combined varactor and capacitor structure and the rejections should be withdrawn for at least these reasons.

Furthermore, nothing in the cited art suggests a combination of control features for a single tuning component. In other words, the prior art, like the switched capacitor circuit of the present application, does show a switch in combination with a capacitor for tuning. Similarly, Albon shows the use of varactors tuned by an error signal. Albon, Para. 14. However, neither of these combines a tunable varactor with a switch. Furthermore, while both Prakash and Rotzoll do show switched varactors, these varactors do not receive a control signal distinct from the signal they are used to tune. In other words, while a control signal may be used to select which varactors to include in the tuning circuit, there is no control signal shown to control the voltage tuning of the varactor diodes, they are merely coupled to the oscillator output when switch selected.

In contrast, the recited switched varactors of Claim 1 are **both** switch selected and applied control voltage controlled by a control circuit. An oscillation output signal is recited distinctly from the applied control voltage. Such an arrangement is shown for some embodiments, for example, in Figure 2 of the present application, where one terminal of the varactors is switchably coupled to the amplifier Gm output while the other terminal is coupled to a control voltage Vcont. Such a duality of control of a single component is neither shown nor suggested by the cited art. The rejections should be withdrawn for at least these reasons.

Furthermore, the assertion that a varactor is merely a type of capacitor results in an interpretation of the independent claims that, as a practical matter, ignores numerous recitations and the combined switch circuits aspect of the recited structure. It is also inconsistent with the description of both the present application and the cited art. Rotzoll

shows and discusses both varactor diodes *x*D*i* and capacitors (e.g. 1C1) and treats them as distinct structures. Prakash is related to Rotzoll in subject matter and has a common inventor. Albon also shows both varactors (arrows through capacitor symbol lines) and capacitors (no arrows) and treats them as distinct structures. Thus, the Office Actions treating varactors as merely a form of capacitors results in an overly broad interpretation of the claims that is contrary to not only the present specification but the cited art. Accordingly, the rejections should also be withdrawn for at least these additional reasons.

The dependent claims are patentable at least based on the patentability of the claims from which they depend. In addition, various of the dependent claims are separately patentable for reasons discussed in the Amendment mailed September 29, 2005, which is incorporated herein by reference as if set forth in its entirety. In the interests of expediting the Examiner's reconsideration of the rejections, only newly raised issues from the present Office Action will be further addressed herein. In addition, the Office Action appears not to address the basis for the rejections of various of the dependent claims. Accordingly, only newly presented discussions of specifically identified dependent claims will be discussed below.

As a preliminary matter, the anticipation rejection over Rotzoll asserts that the amplifier arrangement of Rotzoll is two amplifiers and then states that Rotzoll is a transconductance amplifier based on an intermediate conversion to a current, that is "converted back to a voltage." Office Action, p. 3. Applicant submits that, regardless of the accuracy of this analysis, a transcundactance amplifier outputs a current responsive to a voltage. *See, e.g.* Transconductance definition attached hereto.

With respect to Claims 6 and 7, the Office Action asserts that the selection of values is "a result effective variable." Office Acton, p. 5. However, as discussed above, the claimed combination of switched capacitors and varactors is not disclosed in the prior art and the selection of particular values for the components is, likewise, not obvious. In other words, as there is no disclosure or suggestion to use such a combination of switched circuits, there is clearly no suggestion of how to select values for the respective components. Claims 17, 18, 26 and 27 contain corresponding recitations to Claims 6 and 7 respectively and are separately patentable for at least substantially similar reasons.

The rejection of Claim 9 is similarly based on a simplification of the detailed recitations of the claim as "merely represents the total capacitance," followed by what appears to be a conclusion that the fact that the prior art circuit would have a total capacitance as well so the recitations of Claim 9 would be obvious. Office Action, p. 6. Applicant respectfully submits that even a brief review of Claim 9, provided above in the Listing of the Claims as a courtesy to the Examiner, makes it clear that the present rejection clearly fails to state a grounds for finding Claim 9 obvious as it fails to even address the recitations of the claim, as contrasted with an oversimplified generalization of the claim. Claims 22 and 31 contain corresponding recitations. Accordingly, these claims are also separately patentable for at least these additional reasons.

CONCLUSION

Applicant respectfully submits that, for the reasons discussed above, the references cited in the present rejections do not disclose or suggest the present invention as claimed. Accordingly, Applicant respectfully requests allowance of all the pending claims and passing this application to issue.

Respectfully submitted,

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